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10/759,398

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06/01/2006

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EXAMINER

HON, SOW FUN

ART UNIT

PAPER NUMBER

1772

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|   |                               |                                |  |
|---|-------------------------------|--------------------------------|--|
| <b>Advisory Action</b><br><b>Before the Filing of an Appeal Brief</b> | Application No.<br>10/759,398 | Applicant(s)<br>HATTORI ET AL. |  |
|   | Examiner<br>Sow-Fun Hon       | Art Unit<br>1772               |  |

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 18 May 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

#### AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: None.  
Claim(s) objected to: None.  
Claim(s) rejected: 1-3,5-7.  
Claim(s) withdrawn from consideration: None.

#### AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

#### REQUEST FOR RECONSIDERATION/OTHER

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: \_\_\_\_\_  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). \_\_\_\_\_  
13. ☒ Other: Attachment to advisory action.

***Advisory Action***

1. The proposed amendment will be entered since there are no new issues, the grounds of rejection remaining the same even after the limitations of dependent claim 4 are added to independent claim 1, since both claims 1 and 4 have been rejected over Tanaka in view of Yamazaki. However, the proposed amendment fails to place the application in condition for allowance for the reasons set forth below.

2. Applicant argues that in Yamazaki, the first ion blocking film (2) which is directly on glass substrate (1), has a thickness of 10 to 150 nm to effectively prevent sodium ion contamination from glass substrate (1), and thus, according to Yamazaki, the first ion blocking film must have a thickness of at least 10 nm in order to effectively block sodium ion contamination; and that while Yamazaki mentions the second ion-blocking film of 5-250 nm, the lower limit of which is intended for areas that are already covered by the first ion blocking film (2) and the transparent conductive film (4) while the higher limit is intended for the grooves where the first ion blocking film (2) and the transparent conductive film (4) have been removed. Applicant further argues that in particular, Yamazaki teaches that when only one ion blocking film is used to effectively block sodium ion contamination from the glass substrate, that ion blocking film must have a thickness of at least 10 nm.

Applicant is respectfully apprised that, as pointed out by Applicant later on in the remarks section dated 05/18/06, Tanaka is the primary reference that teaches that if the problem of impurities diffusing into the metal film 222 does not occur, then the insulator film 201 can be omitted. This also means that if there are less impurities diffusing into

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the metal film, then the thickness of the insulator film can be reduced. Therefore, it would have indeed been obvious to one of ordinary skill in the art at the time the invention was made, to have used silicon oxide to form the foundation film of Tanaka, and to have formed it with a thickness within the range of greater than 0 to 8 nm, in order to block ion impurities from diffusing from the glass substrate of Tanaka into the metal film of Tanaka, as taught by Yamazaki. In addition, Matsuzaki teaches a thin film of silicon oxide which, which has a thickness range of 0.5 – 10 nm (column 7, lines 50-55), which overlaps the claimed range of greater than 0 to 8nm, and prevents contamination of the aluminum electrodes (column 7, lines 45-50), demonstrating that the claimed thickness range of greater than 0 to 8 nm is indeed an obvious variation for a silicon oxide film protecting an aluminum film from contamination.

3. Applicant argues that a person with ordinary skill in the art would not be motivated to modify the thickness of the only insulator film of Tanaka to the range of greater than 0 to 8 nm in an attempt to improve both the optical transmission performance and the reflection performance of the pixel electrode.

Applicant is respectfully apprised that the fact that Applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art, cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). As discussed above, one of ordinary skill in the art would have been motivated to provide the insulation film of Tanaka with a thickness in the range of greater than 0 to 8 nm for

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the purpose of providing the thinnest insulation film necessary for the amount of impurities that can diffuse into and contaminate the aluminum film of Tanaka.

4. Applicant argues that a person with ordinary skill in the art would not be motivated to modify the thickness of the only insulator film of Tanaka to the range of greater than 0 to 8 nm especially when the optical reflectivity of the pixel electrode would suddenly drop if the thickness of the insulator film of Tanaka exceeds 8 nm, and when Tanaka actually teaches eliminating the insulator film completely if the removal of impurity problem does not occur.

As discussed above, Applicant is respectfully reminded that when Tanaka teaches that if the problem of impurities diffusing into the metal film 222 does not occur, then the insulator film 201 can be omitted, it also means that if there are less impurities diffusing into the metal film, then the thickness of the insulator film of Tanaka can be reduced. Therefore, it would have indeed been obvious to one of ordinary skill in the art at the time the invention was made, to have used silicon oxide to form the foundation film of Tanaka, and to have formed it with a thickness within the range of greater than 0 to 8 nm, in order to block ion impurities from diffusing from the glass substrate of Tanaka into the metal film of Tanaka, as taught by Yamazaki. In addition, Matsuzaki teaches a thin film of silicon oxide which, which has a thickness range of 0.5 – 10 nm (column 7, lines 50-55), which overlaps the claimed range of greater than 0 to 8nm, and prevents contamination of the aluminum electrodes (column 7, lines 45-50), demonstrating that the claimed thickness range of greater than 0 to 8 nm is indeed an

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obvious variation for a silicon oxide film protecting an aluminum film from contamination, to suit the level of contamination.

5. Applicant argues that the thickness of the foundation film in a range of greater than 0 to 8 nm improves the crystal structure of the Al metal/alloys in the semi-transmitting reflective film formed on the foundation film so that an increase in the amount of optical absorption of the Al metal/alloys is prevented.

Applicant is respectfully reminded that the fact that Applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art, cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). As discussed above, one of ordinary skill in the art would have been motivated to provide the insulation film of Tanaka with a thickness in the range of greater than 0 to 8 nm for the purpose of providing the thinnest insulation film necessary for the amount of impurities that can diffuse into and contaminate the aluminum film of Tanaka.

6. Applicant is respectfully reminded that Tanaka does not teach a thickness for the insulator film. Instead, Tanaka teaches that the insulator film can be omitted if impurity problems do not occur, meaning that the thickness of the insulator film depends on the amount of impurity that could diffuse into and contaminate the aluminum film of Tanaka.

7. In response to Applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was

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within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

8. Applicant's arguments against Matsuzaki are directed against the valid use of Tanaka in view of Yamazaki, and have been addressed above. In addition, Matsuzaki teaches a thin film of silicon oxide which, which has a thickness range of 0.5 – 10 nm (column 7, lines 50-55), which overlaps the claimed range of greater than 0 to 8nm, and prevents contamination of the aluminum electrodes (column 7, lines 45-50), demonstrating that the claimed thickness range of greater than 0 to 8 nm is indeed an obvious variation for a silicon oxide film protecting an aluminum film from contamination, to suit the level of possible contamination to the aluminum film in the laminate of Tanaka.

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Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*S. Hon*  
Sow-Fun Hon  
05/24/06

*Harold Pyon*  
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SUPERVISORY PATENT EXAMINER  
1772

5/24/06